ORDER NO. SD81061924C8

Service Manual

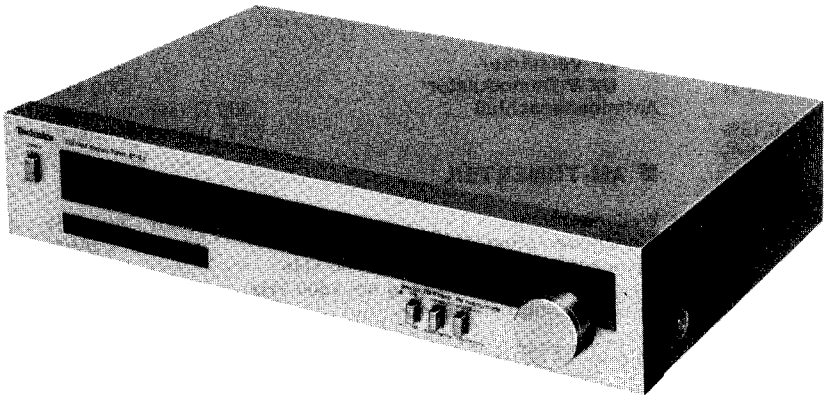
FM/AM Stereo Tuner

ST-S2

[EX], [EH], [EA], [Ei], [XA], [XL]

ST-S2(K)

[EX] [EH], [Ei], [XA]



* The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [EX] is available in Scandinavia.
* [EH] is available in Holland.
* [EA] is available in Austria.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ FM TUNER SECTION

Frequency range	88~108 MHz
Sensitivity	2.0 μV (IHF, usable)
S/N 30 dB	2.0 μV (300Ω), 1.0 μV (75Ω)
S/N 26 dB	1.8 μV (300Ω), 0.9 μV (75Ω)
S/N 20 dB	1.6 μV (300Ω), 0.8 μV (75Ω)
IHF 46 dB stereo quieting sensitivity	25 μV/75Ω
Total harmonic distortion	
MONO	0.15%
STEREO	0.25%
S/N	
MONO	70 dB (78 dB, IHF)
STEREO	65 dB (70 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB~ −1.5 dB
Alternate channel selectivity	
normal (±400 kHz)	60 dB
super narrow (±200 kHz)	20 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	55 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	55 dB
Stereo separation	
1 kHz	40 dB
10 kHz	30 dB
Carrier leak	
19 kHz	−30 dB (−35 dB, IHF)
38 kHz	−45 dB (−50 dB, IHF)
Channel balance (250 Hz~6,300 Hz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	300Ω (balanced) 75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	525~1605 kHz
Sensitivity (S/N 20 dB)	30 μV, 250 μV/m
Selectivity (±10 kHz) at 1,000 kHz	27 dB
Image rejection at 1,000 kHz	50 dB
IF rejection at 1,000 kHz	40 dB

■ GENERAL

Output voltage	0.3V, (0.6V, IHF)
Power consumption	7W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 86 × 289 mm (16-15/16" × 3-3/8" × 11-3/8")
Weight	3.0 kg (6.6 lb.)

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Deutsch

TECHNISCHE DATEN (Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ UKW-TUNERTEIL

Wellenbereich	88~108 MHz
Eingangsempfindlichkeit	2,0 μV (nutzbar nach IHF)
S/R 30 dB	2,0 μV (300 Ω), 1,0 μV (75 Ω)
S/R 26 dB	1,8 μV (300 Ω), 0,9 μV (75 Ω)
S/R 20 dB	1,6 μV (300 Ω), 0,8 μV (75 Ω)
Stereoumschaltschwelle bei 46 dB nach IHF	25 μV/75 Ω
Gesamtklirrfaktor	
Mono	0,15%
Stereo	0,25%
Geräuschabstand	
Mono	70 dB (78 dB nach IHF)
Stereo	65 dB (70 dB nach IHF)
Frequenzgang	20 Hz~15 kHz (+0,5 dB~ −1,5 dB)
Trennschärfe bei Störsender	
normal (±400 kHz)	60 dB
super narrow (±200 kHz)	20 dB
Einfangverhältnis	1,0 dB
Spiegelfrequenz-Dämpfung bei 98 MHz	55 dB
ZF-Dämpfung bei 98 MHz	70 dB
Ansprechdämpfung auf Nebenfrequenzen bei 98 MHz	80 dB
AM-Unterdrückung	55 dB
Übersprechdämpfung	
1 kHz	40 dB
10 kHz	30 dB
Trägerrest	
19 kHz	−30 dB (−35 dB nach IHF)
38 kHz	−45 dB (−50 dB nach IHF)
Kanalabweichung (250 Hz ~ 6300 Hz)	±1,5 dB
Begrenzereinsatz	1,2 μV
Bandbreite	
ZF-Verstärker	180 kHz
UKW-Demodulator	1000 kHz
Antennenanschluß	300 Ω (symmetrisch) 75 Ω (unsymmetrisch)

■ AM-TUNERTEIL

Wellenbereiche	525~1605 kHz
Eingangsempfindlichkeit (S/R 20 dB)	30 μV, 250 μV/m
Trennschärfe (±10 kHz) bei 1000 kHz	27 dB
Spiegelfrequenz-Dämpfung bei 1000 kHz	50 dB
ZF-Dämpfung bei 1000 kHz	40 dB

■ ALLGEMEINE DATEN

Ausgangsspannung	0,3 V, (0,6V, IHF)
Leistungsaufnahme	7W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 86 × 289 mm
Gewicht	3,0 kg

Français

CARACTERISTIQUES (Sujet à changement sans préaris.)

(DIN 45 500)

■ SECTION SYNTONISATEUR FM

Gamme de fréquence	88~108 MHz
Sensibilité	2,0 μV (IHF utilisable)
S/B 30 dB	2,0 μV (300Ω), 1,0 μV (75Ω)
S/B 26 dB	1,8 μV (300Ω), 0,9 μV (75Ω)
S/B 20 dB	1,6 μV (300Ω), 0,8 μV (75Ω)
Sensibilité stéréo au seuil de 46 dB, IHF	25 μV/75Ω
Distorsion harmonique totale	
MONO	0,15%
STEREO	0,25%
Signal/Bruit	
MONO	70 dB (78 dB, IHF)
STEREO	65 dB (70 dB, IHF)
Réponse de fréquence	20 Hz~15 kHz, +0,5 dB~ −1,5 dB
Sélectivité alternée par canal	
normal (±400 kHz)	60 dB
super narrow (±200 kHz)	20 dB
Taux de capture	1,0 dB
Rejection d'image à 98 MHz	55 dB
Rejection FI à 98 MHz	70 dB
Rejection de réponse parasite à 98 MHz	80 dB
Suppression AM	55 dB
Séparation stéréophonique	
1 kHz	40 dB
10 kHz	30 dB
Fuite de porteuse	
19 kHz	−30 dB (−35 dB, IHF)
38 kHz	−45 dB (−50 dB, IHF)
Equilibrage de canaux (250 Hz~6,300 Hz)	±1,5 dB
Point de limite	1,2 μV
Largeur de bande	
Amplificateur FI	180 kHz
Démodulateur FM	1000 kHz
Bornes d'antenne	300Ω (symétrique) 75Ω (asymétrique)

■ SECTION SYNTONISATEUR AM

Gamme de fréquence	525~1605 kHz
Sensibilité (S/B 20 dB)	30 μV, 250 μV/m
Sélectivité(±10 kHz) à 1,000 kHz	27 dB
Réjection d'image à 1,000 kHz	50 dB
Réjection FI à 1,000 kHz	40 dB

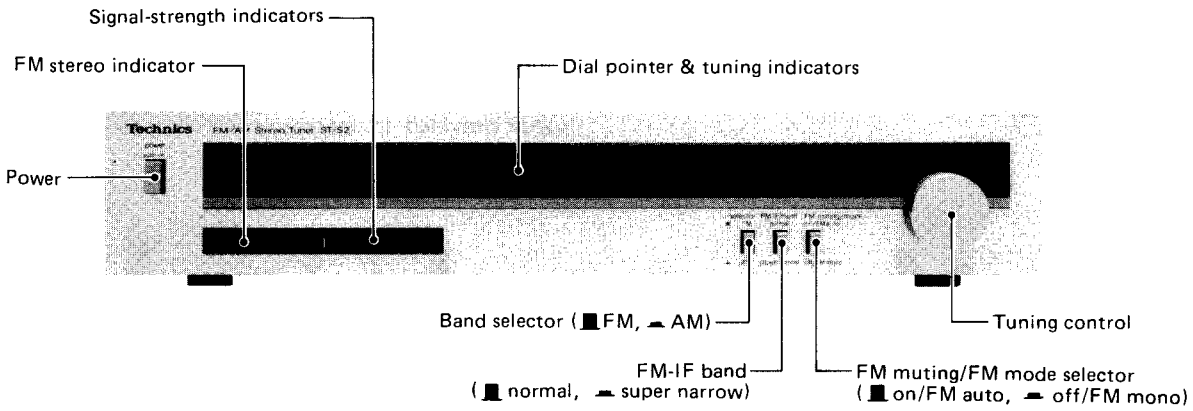
■ DIVERS

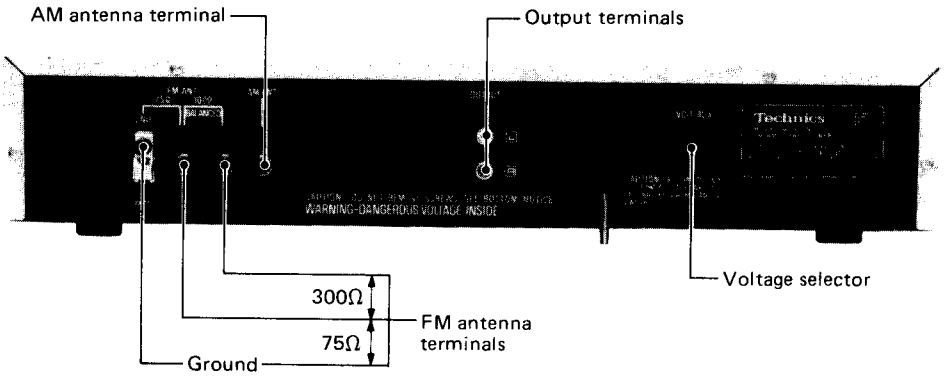
Tension de sortie	0,3 V, (0,6V, IHF)
Consommation	7W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 86 × 289 mm
Poids	3,0 kg

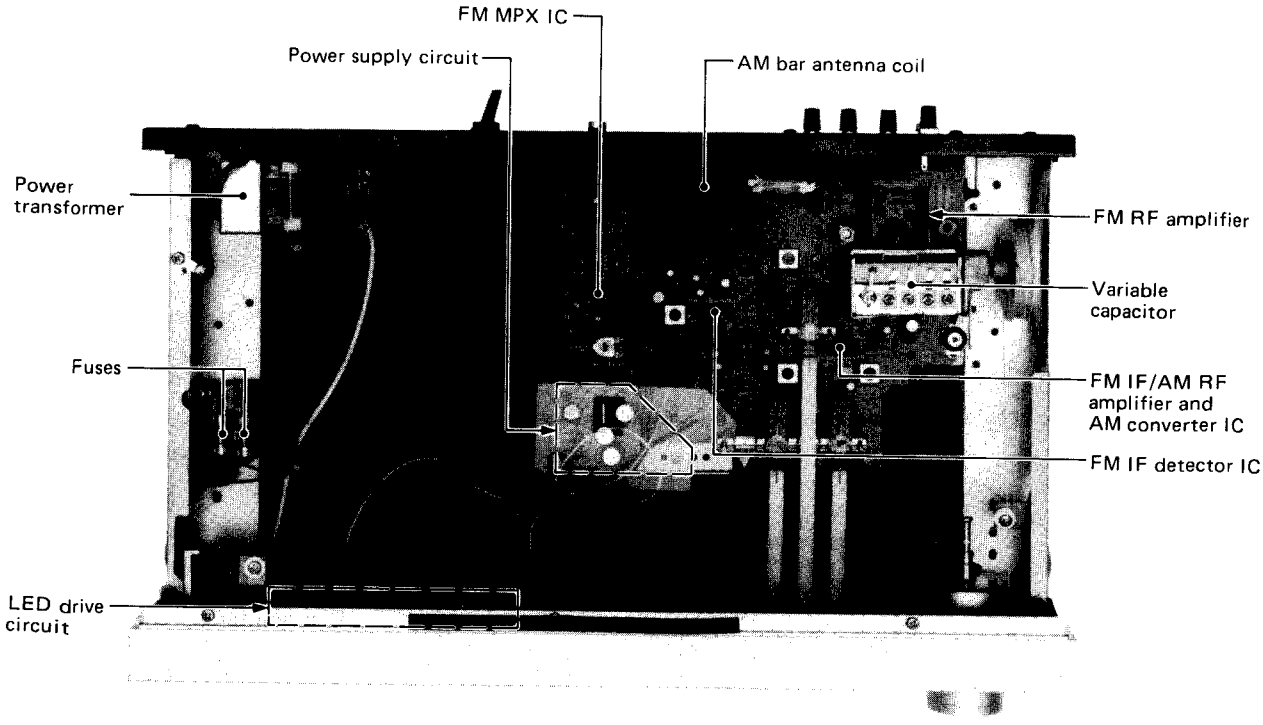
■ CONTENTS

	Page
LOCATION OF CONTROLS	3
DISASSEMBLY INSTRUCTIONS	4, 5
DIAL CORD INSTALLATION GUIDE	5
MEASUREMENTS AND ADJUSTMENTS (English)	5, 6
MESSUNGEN UND JUSTIERUNGEN (Deutsch)	6, 7
MESURAGES ET RÉGLAGES (Français)	7, 8
ADJUSTMENT POINTS	8, 9
REPLACEMENT PARTS LIST	
Electrical Parts	9, 10
Cabinet and Chassis Parts	18
BLOCK DIAGRAM	11, 12
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM	13, 14
SCHEMATIC DIAGRAM	15 ~ 17
EXPLODED VIEWS	19, 20

■ LOCATION OF CONTROLS



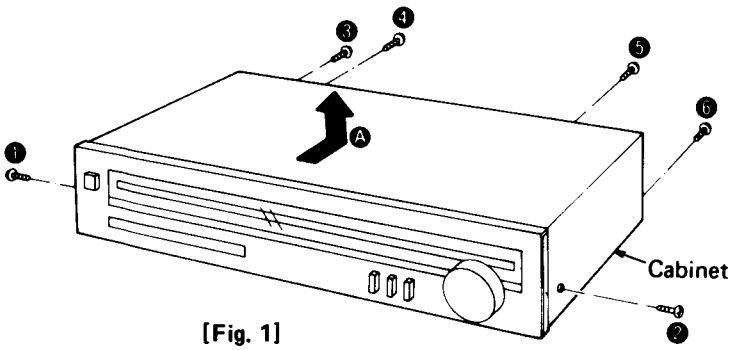




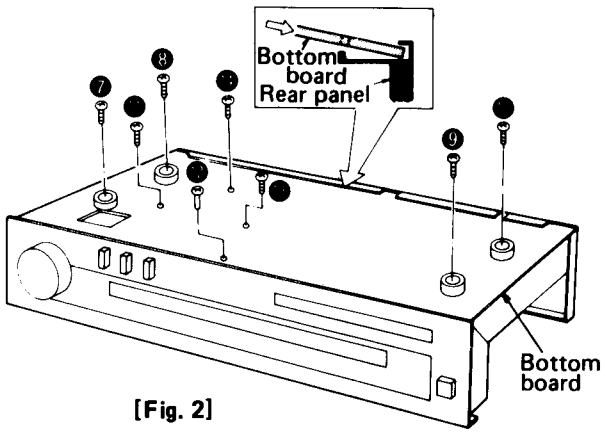
■ DISASSEMBLY INSTRUCTIONS

• How to remove the cabinet and bottom board

1. Remove the 2 setscrews (Fig. 1 : ❶, ❷) on the side and 4 setscrews (Fig. 1 : ❸ ~ ❻) on the back of the cabinet.
2. Move the cabinet in the direction of the arrow Ⓐ in Fig. 1.
3. To remove the bottom board, remove the 8 setscrews (Fig. 2 : ❼ ~ ⓮) of the bottom board.
4. Remove the bottom board.
5. When installing the bottom board, the board in the groove provided in the rear panel and then tighten the setscrews. (Fig. 2)



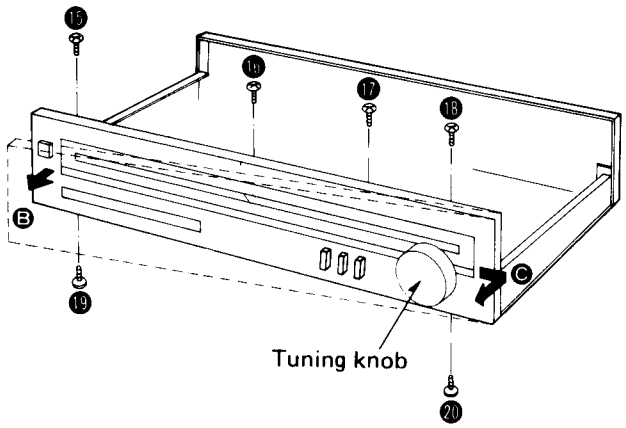
[Fig. 1]



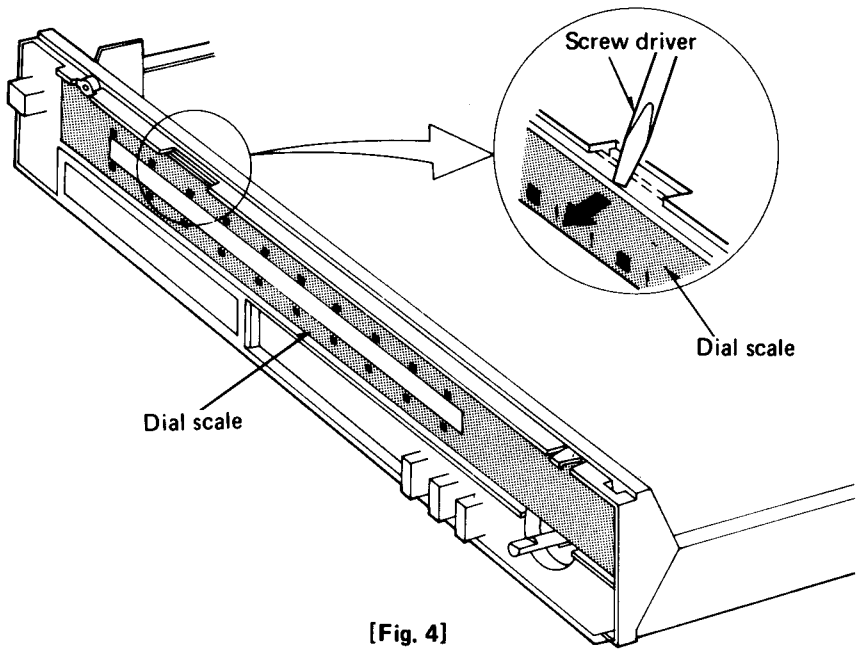
[Fig. 2]

• How to remove the dial pointer

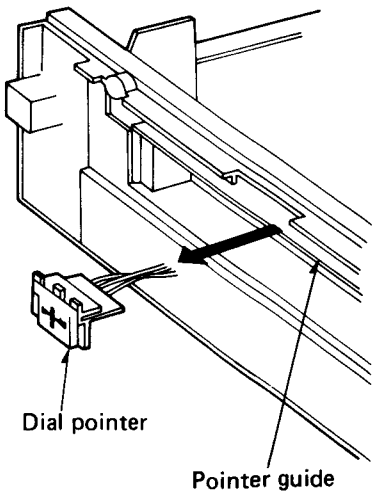
1. Remove the tuning knob.
2. Remove the 6 setscrews (Fig. 3 : ⓯ ~ ⓴) of the front panel. Then move the front panel in the direction of the arrow Ⓑ and Ⓒ in Fig. 3.
3. The dial scale is secured on the front chassis with both side adhesive tape. It can be removed by using a screwdriver or the like as illustrated in Fig. 4.
4. The dial pointer is attached to the pointer guide. It can be removed by pulling toward you. (in Fig. 5)



[Fig. 3]



[Fig. 4]

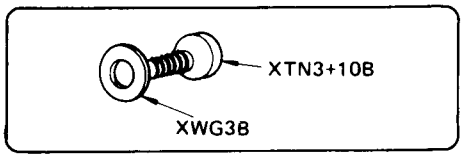


[Fig. 5]

* Since standardized parts are mentioned in the parts list, they are sometimes different in Part No. and Color from the product parts.

Screw No.	Type	Color	Product Part No.	Figure No.
❶, ❷	⊕ 4 x 8 mm, Tapping	Silver	XTB4+8FFN	Fig. 1
❸ ~ ❻	⊕ 3 x 8 mm, Tapping	Silver	XTB3+8BFN	Fig. 1
❼ ~ ❿	⊕ 3 x 12 mm, Tapping (With plain washer)	Red	XTW3+12HFYR	Fig. 2
⓫ ~ ⓮	⊕ 3 x 10 mm, Tapping (With plain washer)	Black	XTW3+10HFZ	Fig. 2
⓯ ~ ⓴	⊕ 3 x 8 mm, Tapping	Gold	XTB3+8B	Fig. 3

Note: Setscrews ⓫ and ⓮ are plain washer-attached screws (Part No. : XTW3+10HFZ).
When substituting, use a 3 x 10mm tapping screw (Part No. : XTN3+10B) and plain washer (Part No. : XWG3B) as shown in Fig. 6.

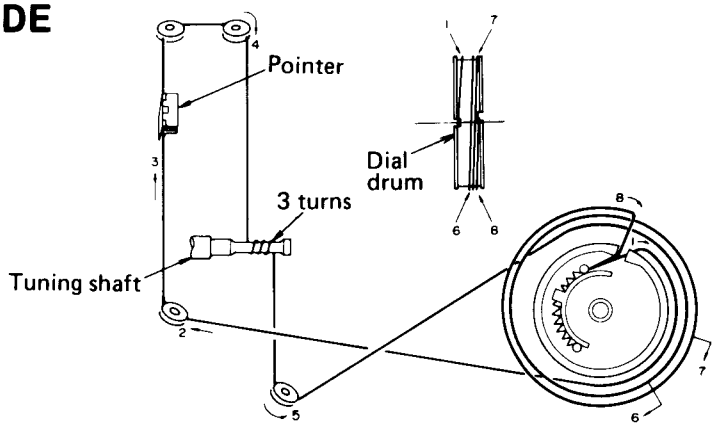


[Fig. 6]

■ DIAL CORD INSTALLATION GUIDE

For threading a fresh cord, proceed as follows.

1. Prepare a fresh cord more than 180 cm (70-15/16") in length.
2. Bring the variable capacitor into a state where the drum is completely turned to the right (maximum capacity and lowest frequency for the variable capacitor).
3. Direct the cord in the order from 1 to 8.
4. Stretch the cord in such a tension as the spring length is elongated by 1.5 times that of the original state.
5. Fix the knot of the cord with the bond.



■ MEASUREMENTS AND ADJUSTMENTS ■ English

- **Setting and Equipment used**

1. AC and DC electronic voltmeters (VTVM).
2. AM signal generator (AM-SG)
3. FM signal generator (FM-SG).
4. Oscilloscope
5. Frequency counter (19kHz and 108MHz measurable).
6. Band selector switch. . . . . {AM (AM adjustment.) / {FM (FM adjustment)
7. FM muting/FM mode switch . : . . . off/FM mono
8. Maintain line voltage at rated voltage.
9. 300Ω FM dummy antenna. . . . . Refer to fig. 7.
10. Output of signal generator should be no higher than necessary to obtain an output reading.

- **Preparation of FM signal generator (FM-SG)**

1. Connect stereo modulator to FM-SG.
2. Apply SG output to antenna terminal of the set through 300Ω FM dummy antenna.
3. The standard input of the set is 60 dB (1mV), 400 Hz 100% modulation (Because of using dummy antenna, SG output must be 12 dB plus (IHF). That is, when input is 60 dB, SG output is to be 72 dB.)

Step No.	AM SIGNAL GENERATOR CONNECTION	AM SIGNAL GENERATOR FREQUENCY	DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	AM-IF ADJUSTMENT					
1	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Powerful input)	450kHz (30% Mod. with 400 Hz)	Point of non-inter-ference	Connect AC VTVM or scope to "OUTPUT" terminals.	T201 (1st IFT) T202 (2nd IFT)	• Adjust the input frequency and adjustment points so that the output becomes maximum.

Step No.	AM/FM SIGNAL GENERATOR CONNECTION	AM/FM SIGNAL GENERATOR FREQUENCY	DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	AM-RF ADJUSTMENT					
2	Connect AM-SG to AM antenna terminal through 200pF capacitor. Common to chassis. (Weak input)	600kHz (30% Mod. with 400 Hz)	600kHz	Connect AC VTVM or scope to "OUTPUT" terminals.	L252 (AM OSC Coil) L250 (AM ANT Coil)	• Adjust for maximum output. Adjust L250 by moving coil bobbin along ferrite core.
3		1500kHz (30% Mod. with 400 Hz)	1500kHz	Connect AC VTVM or scope to "OUTPUT" terminals.	CT202 (AM OSC Trimmer) CT201 (AM ANT Trimmer)	• Adjust for maximum output. • Repeat steps (2) and (3).
	FM-IF ADJUSTMENT					
4	———	No Signal	Point of non-inter-ference	Connect DC VTVM to R109 resister (Refer to Fig. 8)	T101 (Discri. IFT)	• FM muting/FM mode switch to "on/FM auto" position. • Adjust T101 core so that voltage measured in signal mode is 0V in 300mV range.
	FM-RF ADJUSTMENT					
5	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	90MHz (100% Mod. with 400 Hz) weak input.	90MHz	Connect scope to "OUTPUT" terminal.	L4 (OSC Coil) L1 (ANT Coil) L2 (RF DET Coil)	• Add weak input so that noise is included in the output wave form. • Make the adjustment so that the output wave form is vertically symmetrical. (Fig. 9) • Repeat the steps (5) and (6) until the frequency correctly matches the dial scale.
6		106MHz (100% Mod. with 400 Hz) weak input.	106MHz	Connect scope to "OUTPUT" terminal.	CT3 (OSC Trimmer) CT1 (ANT Trimmer) CT2 (RF DET Trimmer)	
	FM MPX V.C.O ADJUSTMENT					
	USING A FREQUENCY COUNTER			USING ALTERNATE SYSTEM		
7	1. 100MHz 60 dB Non-modulated mono signal applied to set. 2. FM muting/FM mode switch to "on/FMauto". 3. Connect frequency counter to [illegible] through resistor (100kΩ). 4. Adjust **VR301** to 19kHz ± 30 Hz.			1. Apply stereo signal from generator or stereo station to tuner. 2. Adjust **VR301** until stereo indicator lights up. Cement arm of **VR301** as shown in fig. 10.		

■ MESSUNGEN UND JUSTIERUNGEN ——— Deutsch

(Für Deutschland)

- **Stellungen und zu benutzende Geräte**

1. Elektronische Voltmeter für Wechsel-und Gleichstrom (VTVM).
2. AM (MW)-Meßsender (AM-SG)
3. UKW-Meßsender (FM-SG)
4. Oszilloskop
5. Signalfrequenzmesser (meßbar für 19kHz und 108MHz).
6. Bereichsschalter . . . . . {AM (MW Abgleich) / FM (UKW Abgleich)
7. FM Muting/Mode Schalter. . . . . off/FM mono.
8. Die Netzspannung auf ihren Sollwert einstellen.
9. UKW-Kunstantenne, 300 ohm . . . Vgl. Abb. 1.
10. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute ablesung.

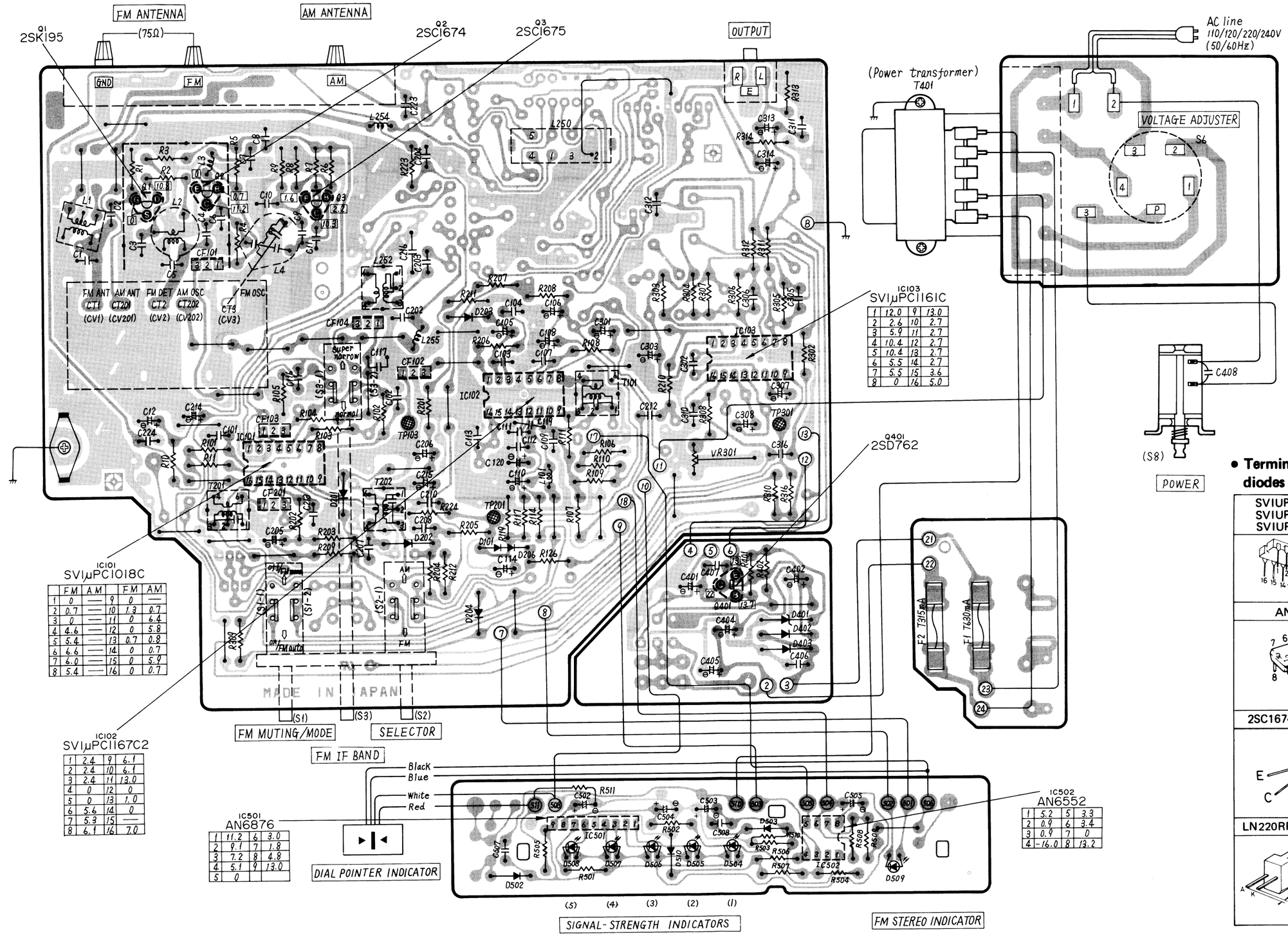
- **Vorbereitung AM UKW-Messender (FM-SG)**

1. Stereo-Modulator an FM-SG anschließen.
2. SG-Ausgang über 300-ohm UKW Kunstantenne an den Antenneneingang des Gerätes schließen.
3. Der normale Eingang des Gerätes beträt 60 dB (1mV), 400 Hz 100% Modulation. (Wegen Verwendung der Kunstantenne muß der Signalausgang 12 dB plus (IHF) sein: d.h. beim Eingang von 60 dB soll der Signalausgang 72 dB sein.)

Nr.	AM MESSENDER ANSCHLUSS	AM MESSENDER FREQUENZ	SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGEGERÄT (Röhrenvoltmeter order Oszillograph)	ABGLEICHSPUNKTE	BEMERKUNGEN
	AM (MW)-ZF-ABGLEICH					
1	Einen MW-Signalgenerator über einen 200pF Kondensator mit dem MW-Antenneneingang verbinden. Die gemeinsame Leitung mit dem Chassis verbinden. (Starker Eingang)	450kHz (400 Hz Modulat., 30%)	Kein Empfang	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang "OUTPUT" schließen.	T201 (1. IFT) T202 (2. IFT)	Die Eingangsfrequenz und die Einstellungspunkte so adustieren, daß der Ausgang den maximalen Wert erreicht.

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

Ground (Earth) lines



IC101	FM	AM		FM	AM
1	0	—	9	0	—
2	0.7	—	10	1.3	0.7
3	0	—	11	0	6.4
4	4.6	—	12	0	5.8
5	5.4	—	13	0.7	0.8
6	6.6	—	14	0	0.7
7	6.0	—	15	0	5.9
8	5.4	—	16	0	0.7

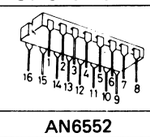
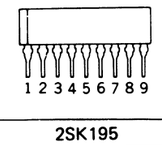
IC102			
1	2.4	9	6.1
2	2.4	10	6.1
3	2.4	11	13.0
4	0	12	0
5	0	13	1.0
6	5.6	14	0
7	5.3	15	—
8	6.1	16	7.0

IC103			
1	12.0	9	13.0
2	2.6	10	2.7
3	5.9	11	2.7
4	10.4	12	2.7
5	10.4	13	2.7
6	5.5	14	2.7
7	5.5	15	3.6
8	0	16	5.0

IC501			
1	11.2	6	3.0
2	9.1	7	1.8
3	7.2	8	4.8
4	5.1	9	13.0
5	0		

IC502			
1	5.2	5	3.3
2	0.9	6	3.4
3	0.9	7	0
4	-16.0	8	13.2

- **Terminal guide of transistors, diodes and IC's**

SV1UPC1018C, SV1UPC1167C2 SV1UPC1161C	AN6876
	
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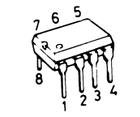
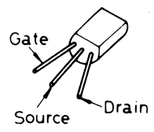
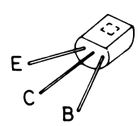
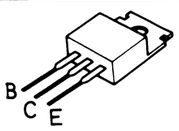
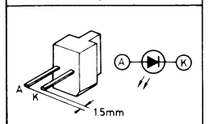
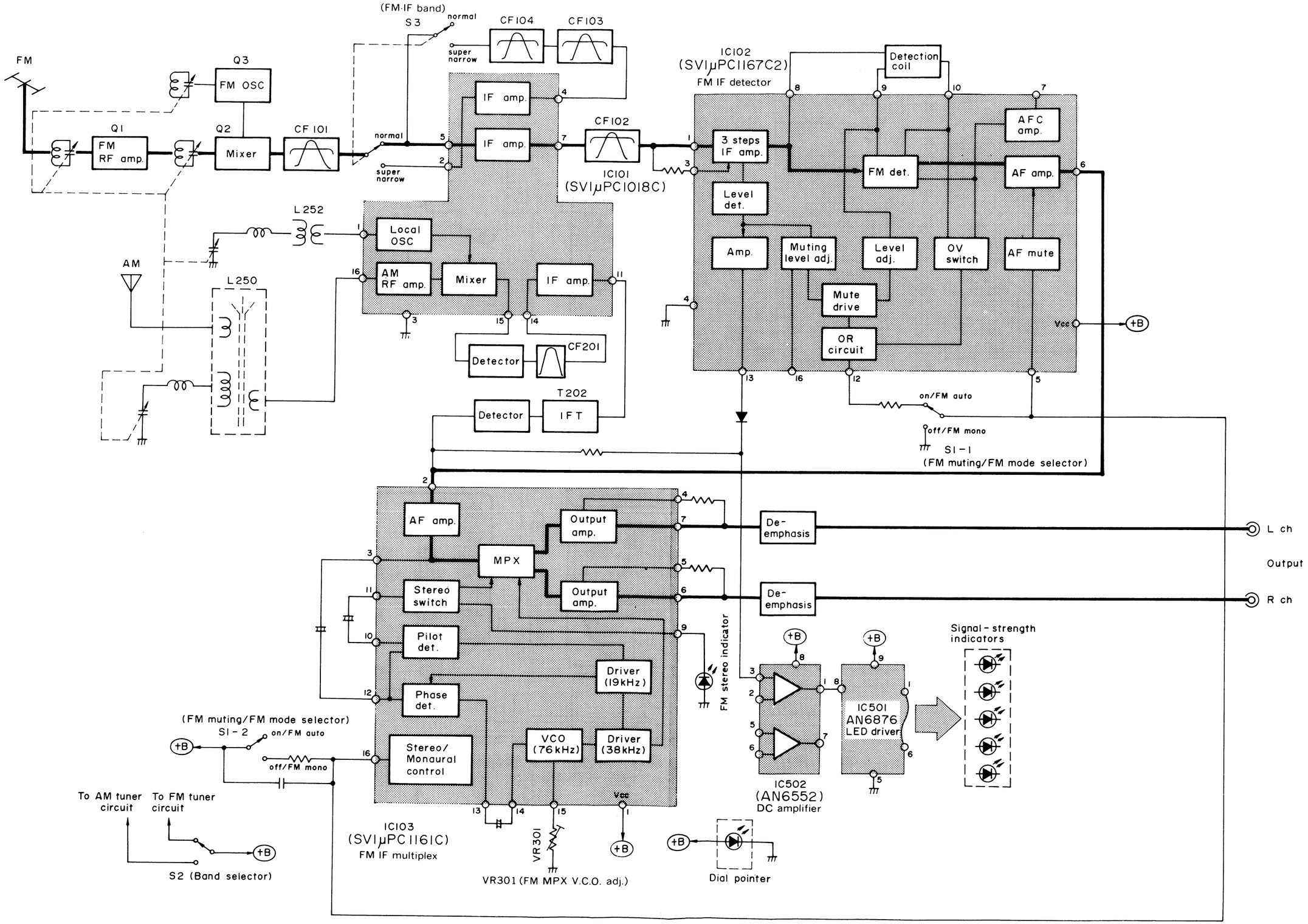
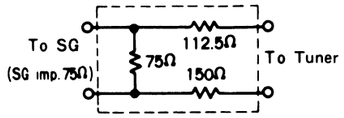
	
2SC1674, 2SC1675	2SD762
	
LN220RP, LN420YP	
	

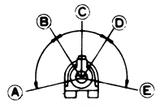
■ BLOCK DIAGRAM





300Ω FM Dummy Antenna

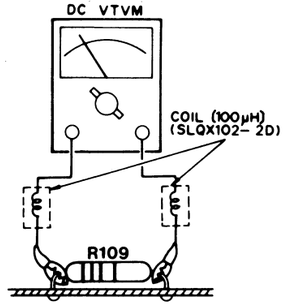
[Fig. 7]
Abb. 1



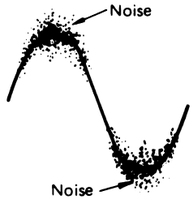
VR301

A – B, D – E: Stereo OFF Position.
B – D: Stereo ON Position (indicator Lighting).
C: Adjust Point of Pilot Circuit.

[Fig. 10]
Abb. 4



[Fig. 8]
Abb. 2



AF output wave form

[Fig. 9]
Abb. 3

■ REPLACEMENT PARTS LIST...Electrical Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUIT			
IC101		RVIUPC1018CF	IC, FM IF/AM RF Amplifier and AM Converter
IC102		SVIUPC1167C2	IC, FM IF Detector
IC103		SVIUPC1161C	IC, FM Multiplex
IC501		AN6876	IC, LED Driver
IC502		AN6552F	IC, DC Amplifier
TRANSISTORS			
Q1		2SK195–H2	Transistor, FM RF Amplifier [FET]
Q2		**2SC1674–M**	Transistor, FM Mixer
Q3		**2SC1675–L**	Transistor, FM Oscillator
Q401		2SD762–O	Transistor, Regulator
DIODES			
D101, 202, 206		**20A90**	Diode
D201, 203, 204		**MA162A**	Diode
D401		**SVDEQA0113RA**	Diode, 13V Zener
D402, 403	⚠	**SVDSR1K2**	Rectifier
D502, 503, 510		**MA162A**	Diode
D504 ~ 508		LN420YP	Light Emiting Diode, Yellow
D509		LN220RP	Light Emiting Diode, Red
COILS and TRANSFORMERS			
L1		SLA4N15	Coil, FM Antenna
L2		SLD4P57–P	Coil, FM RF Detector
L3		ELQ5A77	Coil, Choke

Ref. No.		Part No.	Part Name & Description
L4		SLO4P95–P	Coil, FM Local Oscillator
L101		SLQX101–3M	Coil, Choke
L250		SLF2C35–O	Coil, AM Ferrite Bar Antenna
L252		SLO2C1–P	Coil, AM Oscillator
L254, 255		RLQY15G5–O	Coil, Choke
T101		SLI4C521	Transformer, FM IF
T201		SLI2C129R–M	Transformer, AM IF
T202		SLI2C413R	Transformer, AM IF
T401	⚠	SLT5J141–W	Transformer, Power Source
T401 [XL] only	⚠	SLT5J147–W	Transformer, Power Source
CERAMIC FILTERS			
CF101, 102		SVFE107MM–A	Ceramic Filter, FM 10.7MHz Red
		SVFE107MM–B	Ceramic Filter, FM 10.68MHz Blue
		SVFE107MM–C	Ceramic Filter, FM 10.72MHz Orange
CF103, 104		SVFE107MZ2–A	Ceramic Filter, FM 10.7MHz Red
		SVFE107MZ2–B	Ceramic Filter, FM 10.675MHz Blue
		SVFE107MZ2–C	Ceramic Filter, FM 10.725MHz Orange (Use pair ranks as same as CF101, CF102, CF103, and CF104)
CF201		SVFSFU450B3	Ceramic Filter, AM 457kHz
VARIABLE CAPACITOR			
CV1 ~ 3, 201, 202 (CT1 ~ 3, 201, 202)		ECV5MD34X71G	Variable Capacitor, FM & AM

Ref. No.		Part No.	Part Name & Description
VARIABLE RESISTOR			
VR301		**EVTS3MA00B53**	FM MPX VCO Adjustment
FUSES			
F1	⚠	XBA2C06TR0	Fuse, T630mA (250V)
F2	⚠	XBA2C03TR0	Fuse, T315mA (250V)
SWITCHES			
S1, 2		SSH2009	Switch, FM/AM Selector, Muting
S3		SSH187–1	Switch, FM IF Band
S6	⚠	ESE372	Switch, Voltage Selector
S8	⚠	ESB90619A	Switch, Power Source
RESISTORS			
R1		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R2		**ERD25FJ220**	Carbon, 1/4W, 22Ω, ± 5%
R3		**ERD25FJ221**	Carbon, 1/4W, 220Ω, ± 5%
R4		**ERD25TJ474**	Carbon, 1/4W, 470kΩ, ± 5%
R5		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R6		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R7		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R8		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R9		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R10		**ERD25FJ181**	Carbon, 1/4W, 180Ω, ± 5%
R11		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R101		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R102		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R103		**ERD25FJ331**	Carbon, 1/4W, 330Ω, ± 5%
R104		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R105		**ERD25FJ680**	Carbon, 1/4W, 68Ω, ± 5%
R106		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ± 5%
R107		ERO25CKF3002	Metal Film, 1/4W, 30kΩ, ± 1%
R108		**ERD25TJ393**	Carbon, 1/4W, 39kΩ, ± 5%
R109		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R110		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R111		**ERD25FJ182**	Carbon, 1/4W, 1.8kΩ, ± 5%
R114		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R117		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R119		**ERD25TJ563**	Carbon, 1/4W, 56kΩ, ± 5%
R126		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ± 5%
R201		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R202		**ERD25FJ392**	Carbon, 1/4W, 3.9kΩ, ± 5%
R203		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R204		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
R205		**ERD25FJ471**	Carbon, 1/4W, 470Ω, ± 5%
R206		**ERD25FJ271**	Carbon, 1/4W, 270Ω, ± 5%
R207, 208		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R209		**ERD25FJ102**	Carbon, 1/4W, 1kΩ, ± 5%
R210		**ERD25TJ273**	Carbon, 1/4W, 27kΩ, ± 5%
R211		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R212		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R223		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R224		**ERD25FJ472**	Carbon, 1/4W, 4.7kΩ, ± 5%
R302		**ERD25FJ470**	Carbon, 1/4W, 47Ω, ± 5%
R303, 304		**ERD25TJ223**	Carbon, 1/4W, 22kΩ, ± 5%
R305, 306		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R307		**ERD25TJ274**	Carbon, 1/4W, 270kΩ, ± 5%
R308		**ERD25TJ153**	Carbon, 1/4W, 15kΩ, ± 5%
R309		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%
R310		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R311, 312		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R313, 314		**ERD25TJ333**	Carbon, 1/4W, 33kΩ, ± 5%
R316		**ERD25FJ103**	Carbon, 1/4W, 10kΩ, ± 5%
R401		**ERD25FJ561**	Carbon, 1/4W, 560Ω, ± 5%
R402		**ERD25FJ681**	Carbon, 1/4W, 680Ω, ± 5%
R501		**ERD25FJ332**	Carbon, 1/4W, 3.3kΩ, ± 5%
R502		**ERD25FJ682**	Carbon, 1/4W, 6.8kΩ, ± 5%
R503		**ERD25TJ473**	Carbon, 1/4W, 47kΩ, ± 5%

Ref. No.		Part No.	Part Name & Description
R504		**ERD25TJ104**	Carbon, 1/4W, 100kΩ, ± 5%
R505		**ERD25FJ152**	Carbon, 1/4W, 1.5kΩ, ± 5%
R506		**ERD25TJ123**	Carbon, 1/4W, 12kΩ, ± 5%
R507		**ERD25TJ563**	Carbon, 1/4W, 56kΩ, ± 5%
R508		**ERD25TJ184**	Carbon, 1/4W, 180kΩ, ± 5%
R509		**ERD25FJ391**	Carbon, 1/4W, 390Ω, ± 5%
R510		**ERD25FJ122**	Carbon, 1/4W, 1.2kΩ, ± 5%
R511		**ERD25FJ272**	Carbon, 1/4W, 2.7kΩ, ± 5%
CAPACITORS			
C1		ECCD1H150K	Ceramic, 15pF, 50V, ± 10%
C2		ECCD1H070D	Ceramic, 7pF, 50V, ± 0.5pF
C3		ECKD1H102ZF	Ceramic, 0.001μF, 50V, +80% −20%
C4		ECCD1H030C	Ceramic, 3pF, 50V, ±0.25pF
C5		ECCD1H150K	Ceramic, 15pF, 50V, ± 10%
C6		ECCD1H060C	Ceramic, 6pF, 50V, ±0.25pF
C7		ECCD1H181K	Ceramic, 180pF, 50V, ± 10%
C8		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C9		ECCD1H390KC	Ceramic, 39pF, 50V, ± 10%
C10		ECCD1H150KC	Ceramic, 15pF, 50V, ± 10%
C11		ECKD1H102ZF	Ceramic, 0.001μF, 50V, +80% −20%
C12		**ECEA1ES101**	Electrolytic, 100μF, 25V
C101, 102		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C103, 104		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C105		**ECEA1HS100**	Electrolytic, 10μF, 50V
C106		**ECEA50Z1**	Electrolytic, 1μF, 50V
C107		ECCD1H101K	Ceramic, 100pF, 50V, ± 10%
C108		**ECEA50Z1**	Electrolytic, 1μF, 50V
C109		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C110		**ECEA1CS330**	Electrolytic, 33μF, 16V
C111		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C112, 113		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C114		**ECEA1HS100**	Electrolytic, 10μF, 50V
C116		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C117		ECCD1H470K	Ceramic, 47pF, 50V, ± 10%
C119		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C120		**ECEA50Z1**	Electrolytic, 1μF, 50V
C202		ECCD1H150KC	Ceramic, 15pF, 50V, ± 10%
C203		ECQP1361JZ	Polypropylene, 360pF, 100V, ± 5%
C204		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C205		**ECEA1HS100**	Electrolytic, 10μF, 50V
C206		**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C207, 208		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C210		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C212		ECQM1H223KZ	Polyester, 0.022μF, 50V, ± 10%
C213		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C214		**ECEA1HS100**	Electrolytic, 10μF, 50V
C215		**ECEA50Z1**	Electrolytic, 1μF, 50V
C223		ECKD1H103MD	Ceramic, 0.01μF, 50V, ± 20%
C224		ECCD1H220K	Ceramic, 22pF, 50V, ± 10%
C301		**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C302		ECQM1H473KZ	Polyester, 0.047μF, 50V, ± 10%
C303		**ECEA1ES101**	Electrolytic, 100μF, 25V
C305, 306		ECKD1H271KB	Ceramic, 270pF, 50V, ± 10%
C307		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C308		**ECEA50Z1**	Electrolytic, 1μF, 50V
C310		ECQP1471JZ	Polypropylene, 470pF, 100V, ± 5%
C311, 312		ECQM1H153KZ	Polyester, 0.015μF, 50V, ± 10%
C313, 314		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C316		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C401		**ECEA1CS331**	Electrolytic, 330μF, 16V
C402		**ECEA1VS221**	Electrolytic, 220μF, 35V
C404, 405		**ECEA1CS331**	Electrolytic, 330μF, 16V
C406		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C407		ECKD1H271KB	Ceramic, 270pF, 50V, ± 10%
C502, 503		**ECEA1HS470**	Electrolytic, 47μF, 50V
C504		**ECEA25Z4R7**	Electrolytic, 4.7μF, 25V
C505		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C507		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C508		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C601	⚠	ECKDKC103PF	Ceramic, 0.01μF, 400VAC, +100% 0%

Nr.	AM/UKW MESSENDER ANSCHLUSS	AM/UKW MESSENDER FREQUENZ	SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGEGERÄT (Röhrenvoltmeter order Oszillograph)	ABGLEICHSPUNKTE	BEMERKUNGEN
	AM (MW)-HF-ABGLEICH					
2	Einen MW-Signalgenerator über einen 200pF Kondensator mit dem MW-Antenneneingang verbinden. Die gemeinsame Leitung mit dem Chassis verbinden. (Schwacher Eingang)	600kHz (400 Hz Modulat., 30%)	600kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang "OUTPUT" schließen.	L252 (Osc. Spule) L250 (Ant. Spule)	• Auf max. Ausgang abgleichen. • L250 (Spule) wird abgleichen, in dem die Spule am Ferritstab entlanggeschoben wird.
3		1500kHz (400 Hz Modulat., 30%)	1500kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang "OUTPUT" schließen.	CT202 (Osc. Trimmer) CT201 (Ant. Trimmer)	• Auf max. Ausgang abgleichen. • Schritt (2) und (3) sind zu wiederholen.
	UKW-ZF-ABGLEICH					
4	———	Kein Signal	Kein Empfang	Gleichspannungsmesser uber den Ausgang R109 widerstand schließen (Vgl. Abb. 2)	T101 (Diskriminator FT)	• FM muting/FM mode-Schalter. auf "on/FM auto" stellen. • Den Kern von T101 so justieren, daß die gemessene Spannung im signallosen Modus 0V im 300mV Bereich beträgt.
	UKW-HF-ABGLEICH					
5	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87.5MHz (400 Hz Modulat., 100%) Schwacher Eingang	87.5MHz (Frequenz-min.)	Oszillograph über den Ausgang "OUTPUT" schließen.	L4 (Osc. Spule)	• Einen schwachen Eingang geben, bei dem Geräusch in der Ausgangswellenform enthalten wird. • So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb. 3) • Die Einstellung von (5), (6) und (7) wieder holen, bis die Frequenz mit der Skala übereinstimmt.
6		90MHz (400Hz Modulat., 100%) Schwacher Eingang	90MHz	Oszillograph über den Ausgang "OUTPUT" schließen.	L1 (Ant. Spule) L2 (Det. Spule)	
7		106MHz (400 Hz Modulat., 100%) Schwacher Eingang	106MHz	Oszillograph über den Ausgang "OUTPUT" schließen.	CT3 (Osc. Trimmer) CT1 (Ant. Trimmer) CT2 (Det. Trimmer)	
	UKW-STEREO-DEKODER-ABGLEICH					
8	UNTER VERWENDUNG EINES ZÄHLERS: 1. Unmoduliertes Mono-Signal 100MHz in das Gerät speisen. 2. FM muting/mode-Schalter auf "on/FM auto" stellen. 3. Zähler über einen Widerstand 100k ohm an TP301 schließen. 4. **VR301** auf 19kHz ± 30 Hz einstellen.			ALTERNATIV-MEß METHODE: 1. Stereosignal entweder von einem Stereogenerator. oder einem Sender einspeisen. 2. **VR301** so einstellen, bis die Stereolampe auf leuchtet. Schleifer von **VR301** sichern, wie in Abb. 4 gezeigt.		

■ MESURAGES ET RÉGLAGES ——— Français ———

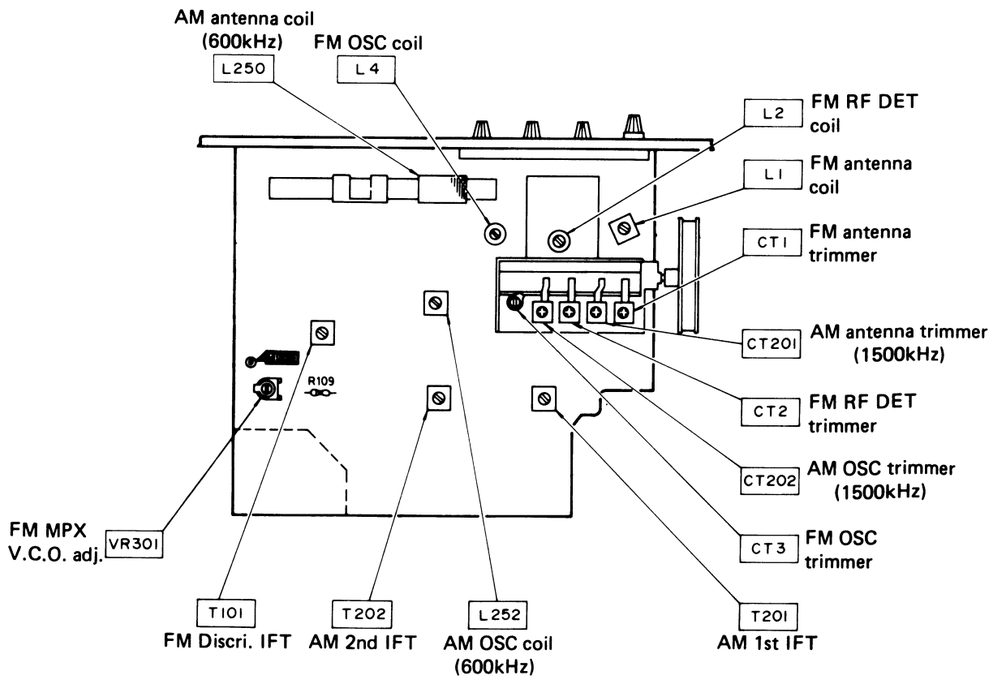
- **Réglage et équipement utilisé**
1. Voltmètres électronique de courant alternatif et de courant continu (VTVM).
2. Générateur du signal AM (AM-SG).
3. Générateur du signal FM (FM-SG).
4. Oscilloscope
5. Compteur de fréquence (19kHz et 108MHz mesurable).
6. Sèlecteur de gamme. . . . . { AM (Alignment AM) / FM (Alignement FM)
7. Commutateur de silencieux/mode. . . . off/FM mono.
8. Conserver la tension du secteur à la tension nominale.
9. Antenne fictive FM 300Ω . . . . . Voir fig. 7.
10. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire à obtenir une lecture en sortie.

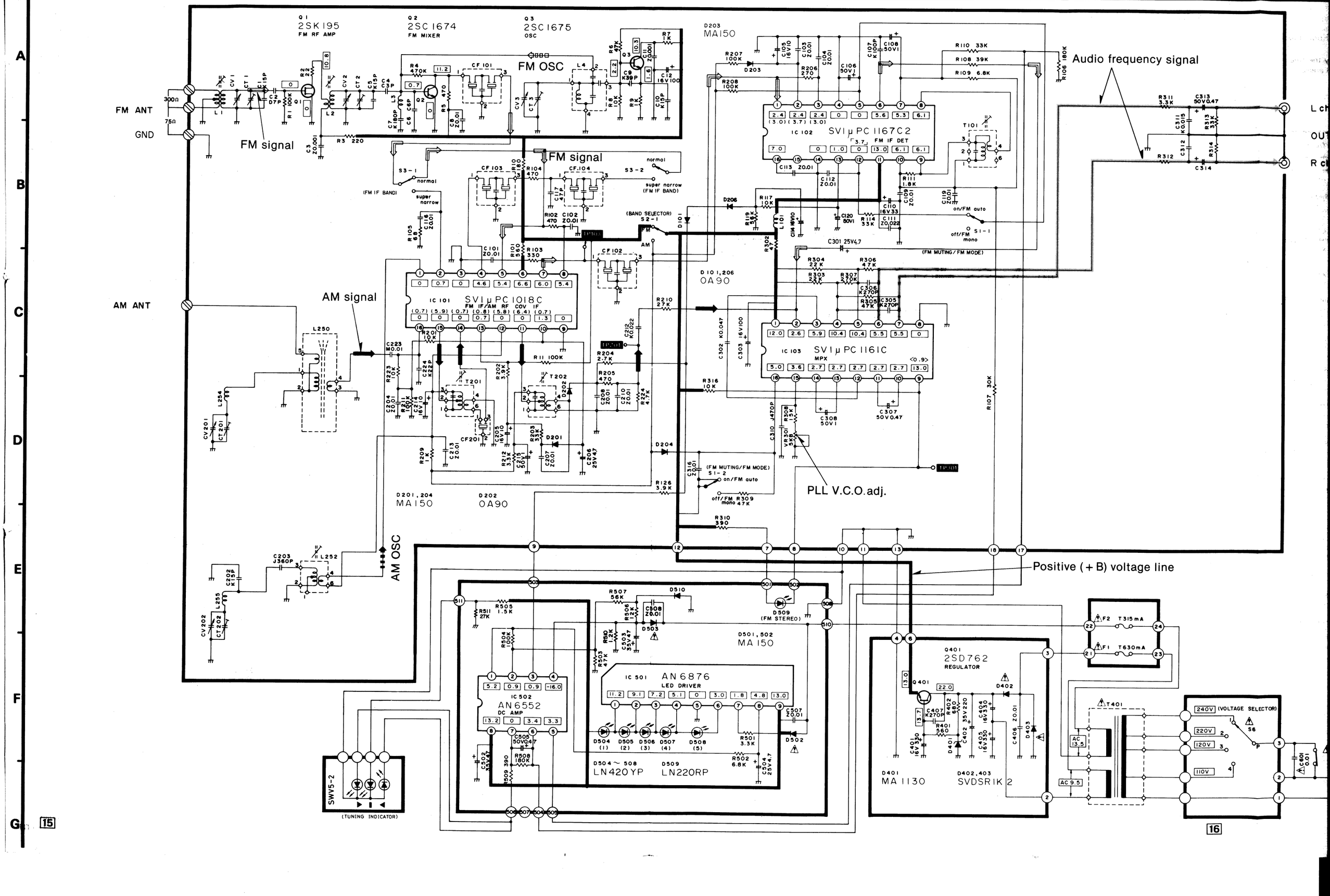
- **Préparation du générateur de signal FM (FM-SG)**
1. Brancher la commande de réglage stéréophonique à FM-SG.
2. Alimenter la sortie SG à la borne de l'antenne de l'appareil, par l'antenne fictive FM, 300 ohms.
3. L'entrée standard de l'appareil est de 60 dB (1mV), 400Hz, 100% de modulation (à cause de l'utilisation de l'antenne fictive, la sortie SG doit être de plus 12 dB (IHF). Ce qui signifie que quand l'entrée est de 60 dB, la sortie SG doit être de 72 dB.)

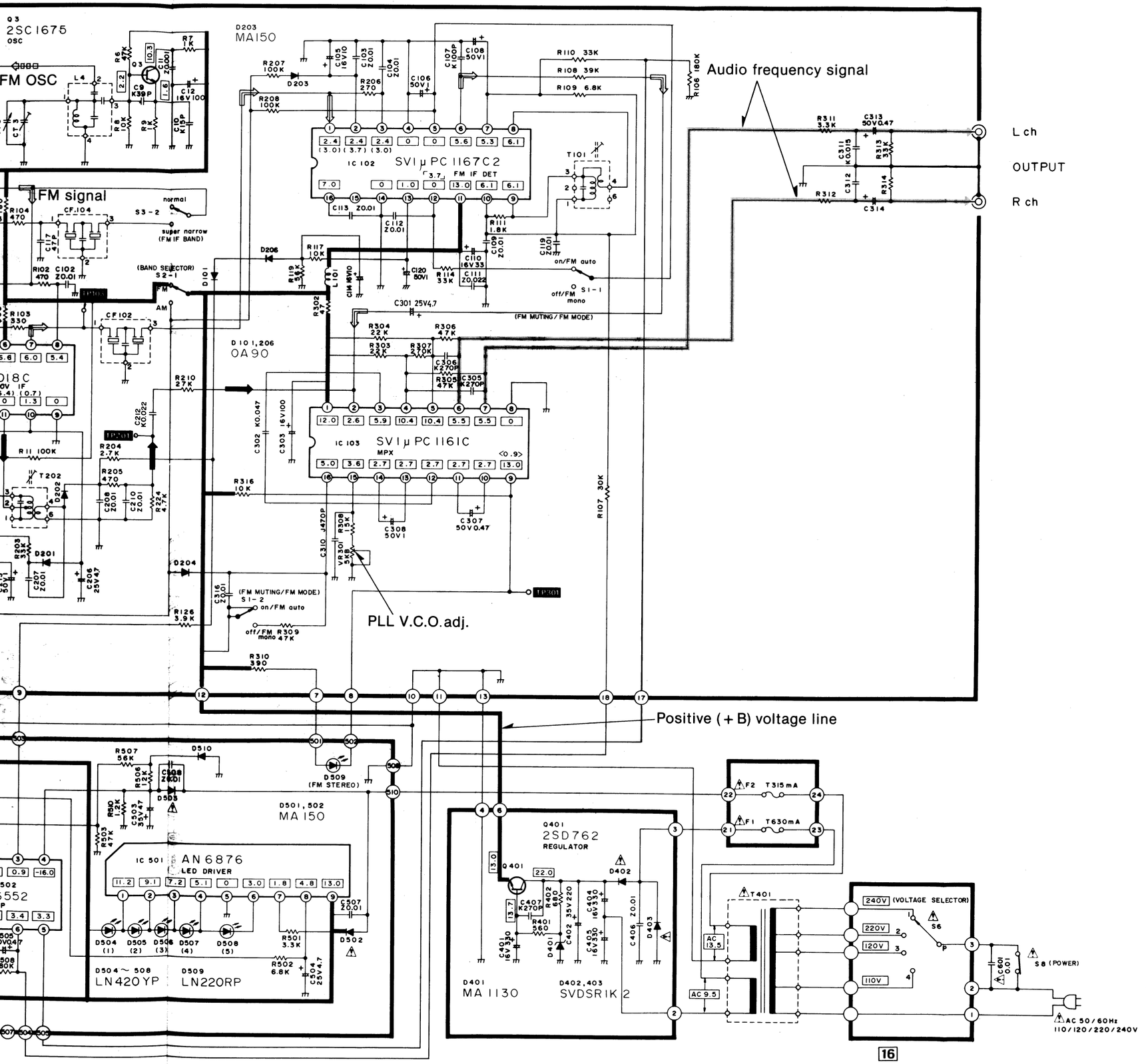
No.	AM GENERATEUR BRANCHEMENT	AM GENERATEUR FREQUENCE	AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ELECTRONIQUE OSCILLOSCOPE)	POINTS DE REGLAGE	OBSERVATIONS
	RÉGLAGE DE FI-AM					
1	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200pF. Commun au châssis (Entrée sous puissante)	450kHz (modulè à 30% par 400 Hz)	Point sans signal	C.A voltmètre èlectronique ou oscilloscope sur prise de sortie de l'appareil.	T201 (1 transfo FI) T202 (2 transfo FI)	• Régler la fréquence d'entrée et les points de réglage de telle sorte que la sortie devienne maximale.

Nr.	AM/FM GENERATEUR BRANCHEMENT	AM/FM GENERATEUR FREQUENCE	AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ELECTRONIQUE OSCILLOSCOPE)	POINTS DE REGLAGE	OBSERVATIONS
	RÉGLAGE DE RF-AM					
2	Brancher le AM-SG à la borne de l'antenne AM par un condensateur de 200pF. Commun au châssis. (Entrée faible)	600kHz (modulé à 30% par 400 Hz)	600kHz	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de l'appareil.	L252 (bobine OSC) L250 (bobine ANT)	• Réglez au maximum de signal de sortie. • Régler L250 (bobine AM) en déplacant la bobine le long du noyau de ferrite.
3		1500kHz (modulé à 30% par 400 Hz)	1500kHz	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de l'appareil.	CT202 (trimmer OSC) CT201 (trimmer ANT)	• Réglez au maximum de signal de sortie. • Recommencez les étapes (2) et (3).
	RÉGLAGE DE FI-FM					
4	———	Sans signal	Point sans signal	C.C. voltmétre sur prise R109 résistance. (Voir la Fig. 8)	T101 (Transfo FI discri.)	• Commutateur de silencieux sur "on/FM auto". • Régler le noyau T101 de telle sorte que le voltage mesuré dans le mode sans signal, soti de 0V dans la gamme des 300mV.
	RÉGLAGE DE RF-FM					
5	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	90 MHz (modulé à 100% par 400 Hz) Entrée faible	90 MHz	Oscilloscope sur prise de sorite du tuner.	L4 (bobine OSC) L1 (bobine ANT) L2 (bobine DET)	• Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie. • Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 9) • Refaire les réglages (5) et (6). jusqu'à ce que la fréquence corresponde correctement avec l'échells du cadran.
6		106 MHz (modulé à 100% par 400 Hz) Entrée faible	106 MHz	Oscilloscope sur prise de sortie du tuner.	CT3 (trimmer OSC) CT1 (trimmer ANT) CT2 (trimmer DET)	
	RÉGLAGE PILOTE MULTIPLEX FM					
7	AVEC UN ERÉQUENCEMÉNTRE: 1. Signal mono 100MHz non modulé appliqué à l'appareil. 2. Commutateur de silencieux sur "on/FM auto". 3. Branchez le fréquencemètre sur TP301 à travers une 4. Régler **VR301** sur 19kHz ± 30 Hz.			PAR UN OUTRE SYSTÈME: 1. Appliquez à l'appareil un signal stéréo provenant d'un générateur ou de la réception d'un émetteur. 2. Régler **VR301** jusqu à ce que l'indicateur de stéréophonic s'allume. Collez le curseur le **VR301** comme indiqué sur la fig.10		

■ ADJUSTMENT POINTS




Q1 2SK195 FM RF AMP
Q2 2SC1674 FM MIXER
Q3 2SC1675 OSC
FM OSC
D203 MA150
FM ANT
GND
AM ANT
FM signal
AM signal
Audio frequency signal
Positive (+B) voltage line
PLL V.C.O.adj.
AM OSC
IC 101 SVIμPC1018C FM IF/AM RF COV IF
IC 102 SVIμPC1167C2 FM IF DET
IC 103 SVIμPC1161C MPX
IC 501 AN6876 LED DRIVER
IC 502 AN6552 DC AMP
D501,502 MA150
D504~508 LN420YP
D509 LN220RP
D201,204 MA150
D202 0A90
D101,206 0A90
Q401 2SD762 REGULATOR
D401 MA1130
D402,403 SVDSRIK2
(BAND SELECTOR) S2-1
(FM IF BAND) S3-1
(FM MUTING/FM MODE) S1-2
(FM MUTING/FM MODE) S1-1
(TUNING INDICATOR) SWV5-2
(VOLTAGE SELECTOR) S6
240V
220V
120V
110V
F2 T315mA
F1 T630mA
T101
T201
T202
T401
L250
L252
L254
L255
CF101
CF102
CF103
CF104
CF201
TP101
TP201
TP301
TP401
TP501



■ SCHEMATIC DIAGRAM

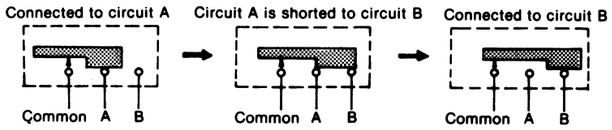
(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

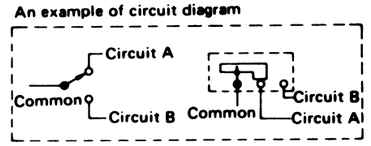
1. **S1-1, 1-2** : FM muting/FM mode selector switch in "**on/FM auto**" position.
   on/FM auto ⟷ off/FM mono
2. **S2-1** : Band selector switch in "**FM**" position.
   FM ⟷ AM
3. **S3-1, 3-2** : FM IF-band selector switch in "**normal**" position.
   normal ⟷ super narrow
4. **S6** : Voltage selector switch in "**240V**" position.
   ④ 110V ⟷ ③ 120V ⟷ ② 220V ⟷ ① 240V
5. **S8** : Power source switch in "**on**" position.
6. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
   * Figures in ▭ stand for DC voltage in FM/AM signal reception mode.
   * Figures in ⟨ ⟩ stand for DC voltage in FM stereo signal reception mode.
   * Figures in ⌜ ⌟ stand for DC voltage in FM (no signal) muting to on mode.
   * Figures in ( ) stand for DC voltage with the band selectors circuit set at AM.
7. Signal lines
   ⟹ FM signal ▬ Positive (+B) voltage line
   ⟹ Audio frequency signal ▪▪▪▶/▬▶ AM signal
8. Important safety notice:
   Components identified by ⚠ make have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Shorting Switch

This unit uses a shorting switch. As illustated below, the circuit is shorted to the next circuit without being opened.
In the circuit diagram, the shaded area represents the common terminal.



An example of circuit diagram



■ REPLACEMENT PARTS LIST...Cabinet & Chassis Parts

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety Notice: Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. [K] -marked parts are used for black only, while ○-marked parts are for silver type only.
4. Parts other than [K]- and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. : ST-S2(K)

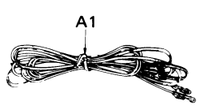
Ref. No.		Part No.	Part Name & Description
CABINET and CHASSIS PARTS			
1	○	SYW513	Front Panel Ass'y
1	[K]	SYW513–1	Front Panel Ass'y (Black)
2		SBN1043	Knob, Tuning
3		SHP671–1	Spacer, Knob
4		SBC337	Button, Power Source
5		SDZ051–2	Cord, Dial 180 cm
6		SWV5–2	Pointer, Dial
7		SHP15–2	Spacer, Pointer
8		SBC409	Button, Push Switch
9		SGU233	Transparent Cover
10	○	SUFTS2E	Front Sub Panel Ass'y
10	[K]	SUFTS2KE	Front Sub Panel Ass'y (Black)
11	○	SKC790S	Cabinet Cover
11	[K]	SKC790B	Cabinet Cover (Black)
12		RJT202B	Terminal
13		SJT347	Terminal, Fuse
14		SDR3	Roller, Dial Cord
15		SUR125	Bracket, Roller
16		SUG67	Guide, Pointer
18		SUB71	Coupling Rod
19		SUB69	Coupling Rod
20		SDT8083	Shaft, Tuning Ass'y (W/Flywheel)
21		SUR123	Bracket, Roller
22		SHE73	Spacer, PCB
23		SJF3247–1N	Terminal, Output
24 [EX, EA] only		SGPTS2E	Rear Panel (Made in Japan)
24		SGP2630–1F	Rear Panel (Made in Japan)
24 [Ei] only		SGP2630–1K	Rear Panel (Made in Singapore)
25		SHR127	Bushing, AC Cord
26	Δ	**SJA88**	AC Cord
26 [XL] only	Δ	QFC1208M	AC Cord
27		SHR401–1	Lock Pin, Terminal
28		SJF4419–4	Terminal
29		SHG711	Spacer
30		SDD47–1	Dram, Dial
31		SDSA4121	Spring, Dial
32		SKU9110	Bottom Board
33		SKL249	Foot

Ref. No.		Part No.	Part Name & Description
SCREWS, WASHERS and NUT			
N1		**XTB3+8BFZ**	Screw, Tapping, ⊕ 3 x 8
N2		**XNS11**	Nut, ϕ11
N3		**XWD11B**	Washer, External Toothed Lock, ϕ11
N4		**XSN3+6S**	Screw, ⊕ 3 x 6
N5		**XWA3B**	Washer, Spring, ϕ3
N6		**XTB4+8BFN**	Screw, Tapping, ⊕ 4 x 8
N7		**XTN3+8B**	Screw, Tapping, ⊕ 3 x 8
N8		**XWC3B**	Washer, External Toothed Lock, ϕ3
N9		**XTB3+8BFZ**	Screw, Tapping, ⊕ 3 x 8
N10		SHD3X21F–1	Screw
N11		**XTS3+8B**	Screw, Tapping, ⊕ 3 x 8
N12		**XTN3+10B**	Screw, Tapping, ⊕ 3 x 10
N13		**XWG3**	Washer, Plain, ϕ3
N14		**XWC3B**	Washer, External Toothed Lock, ϕ3
N15		**XTB3+8BFN**	Screw, Tapping, ⊕ 3 x 8
N16		**XTB3+10BFZ**	Screw, Tapping, ⊕ 3 x 10
N17		**XTN3+8B**	Screw, Tapping, ⊕ 3 x 8
N18		**XWG3**	Washer, Plain, ϕ3
N19		**XTN3+10BFZ**	Screw, Tapping, ⊕ 3 x 10
N20		**XWG3FZ**	Washer, Plain, ϕ3
N21		**XTN3+12B**	Screw, Tapping, ⊕ 3 x 12
N22		SHD3X27	Screw
ACCESSORIES			
A1		SSA267	Cord, FM Indoor Antenna
A2		SJP2129–5	Cord, Connection
A3 [XA] only	Δ	SJP5213–1	Plug Adaptor, AC Power
A4		SQF10785	Instruction Book, Printed Matter
PACKING PARTS			
P1		SPP649	Polyethylene Bag
P2		SPS3073–2	Pad, Left Side
P2 [XL] only		SPS3073–1	Pad, Left Side
P3		SPS3075–2	Pad, Right Side
P3 [XL] only		SPS3075–1	Pad, Right Side
P4 [XA] only	○	SPG3175	Carton Box
P4 [EX, EG, EH, EA] only	○	SPG3177	Carton Box
P4 [XL] only	○	SPG3179	Carton Box
P4 [Ei] only		SPG3301–1	Carton Box (Made in Singapore)
P4 [EX, EH] only	[K]	SPG3183	Carton Box
P4 [XA] only	[K]	SPG3181	Carton Box

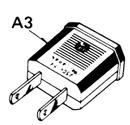
Areas

* [EX] is available in Scandinavia.
* [EH] is available in Holland.
* [EA] is available in Austria.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

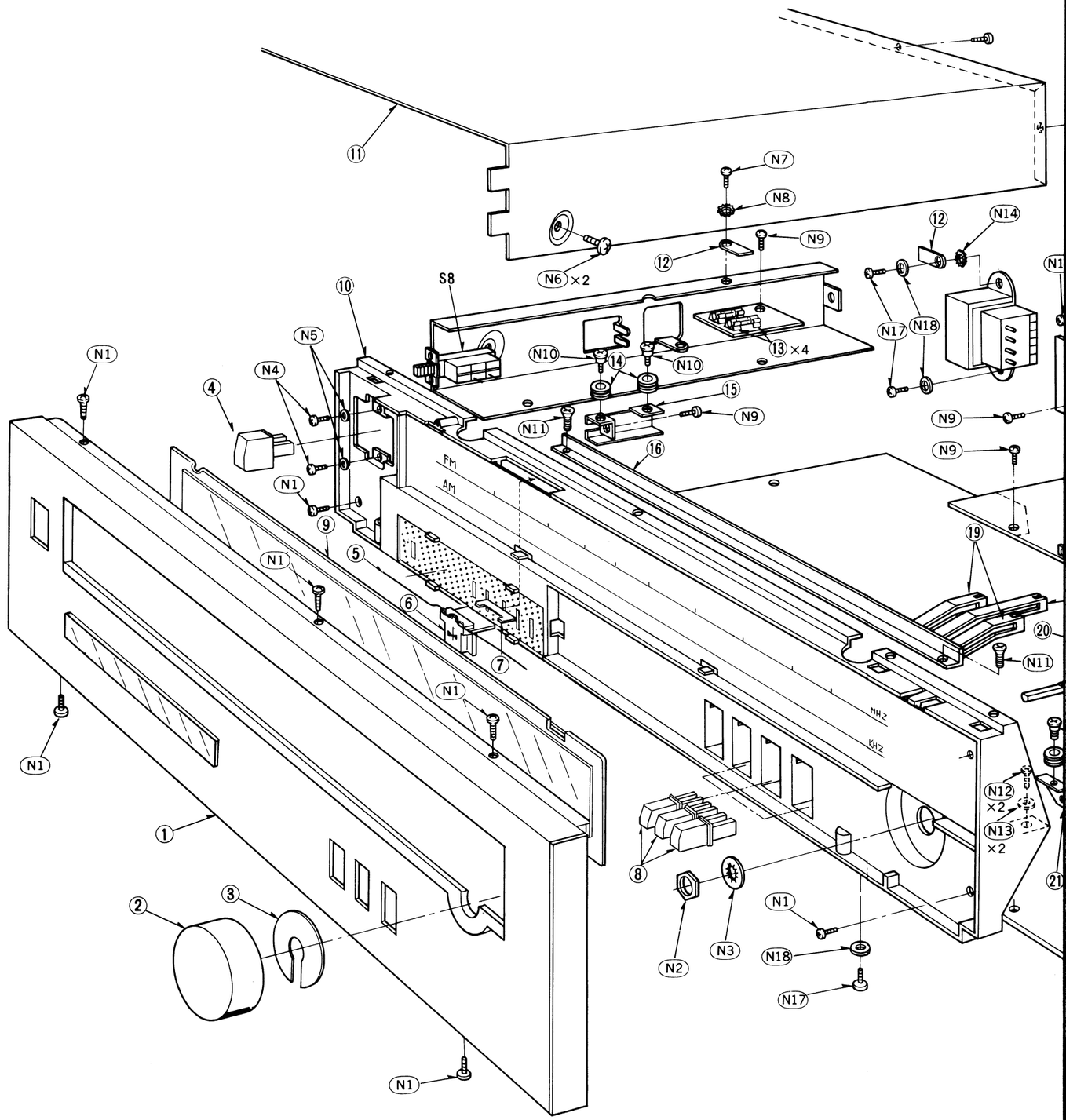
• Accessories



[XA] area only



■ EXPLODED VIEWS



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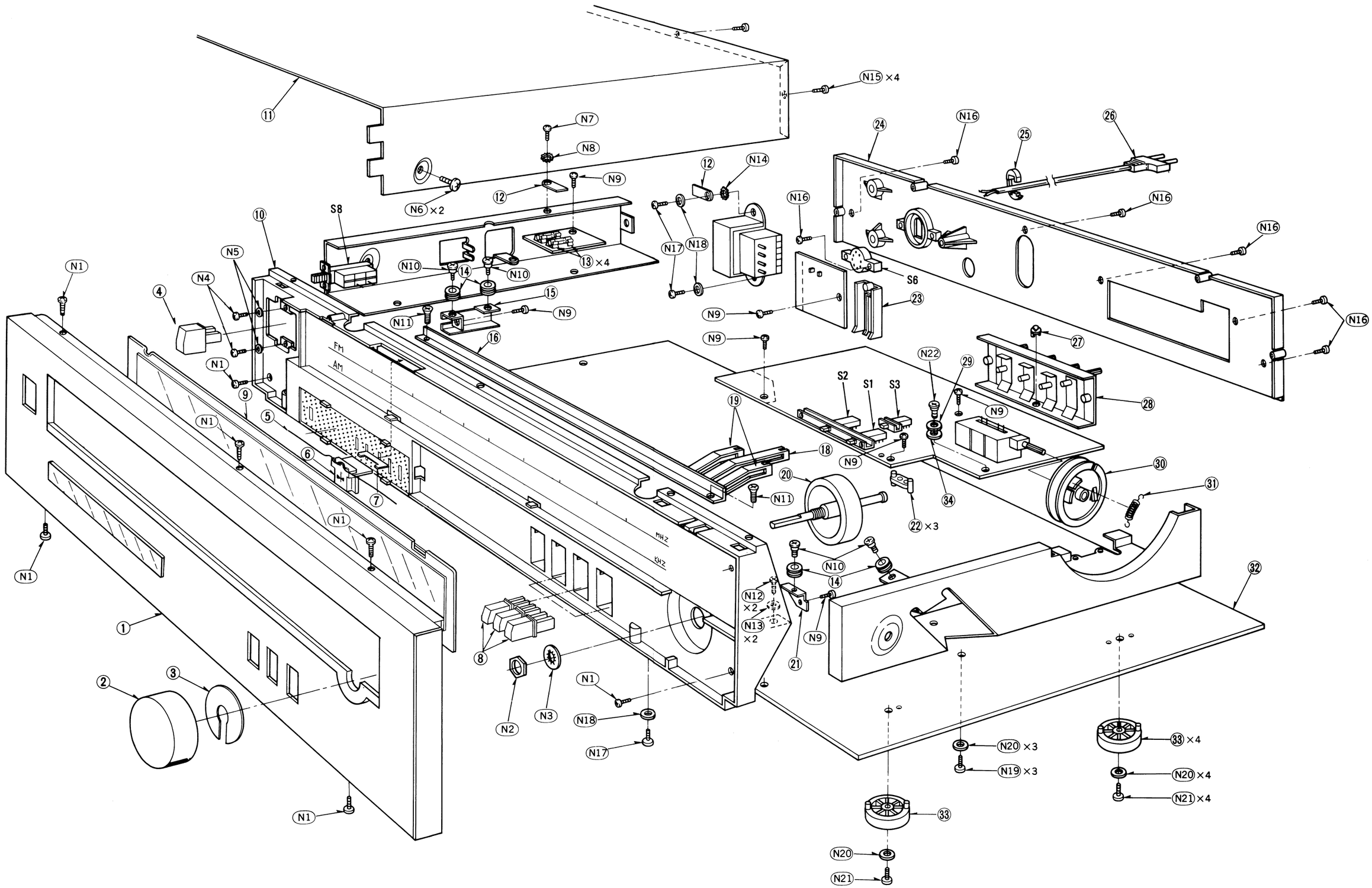

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